LAMBDA

INSTRUCTION MANUAL

REGULATED POWER SUPPLIES

Model – **LFS-43 SERIES**

SPECIFICATIONS AND FEATURES

54-2771

MP MASTER
MA26527

DC OUTPUT — Voltage regulated for line and load. For voltage and current ratings see table I below.

TABLE I

MODEL	VOLTAGE RANGE	MAXIMUM CURRENT (AMPS) AT AMBIENT TEMPERATURE		
		40°C	50°C	60°C
LFS-43-2	2 ± 5%	40.0	33.5	25.0
LFS-43-5	5 ± 5%	40.0	33.5	25.0
LFS-43-6	6 ± 5%	35.0	28.0	20.5
LFS-43-12	12 ± 5%	19.0	15.0	11.0
LFS-43-15	15 ± 5%	15.5	12.0	9.0
LFS-43-20	20 ± 5%	11.8	9.2	6.8
LFS-43-24	24 ± 5%	10.0	7.8	5.7
LFS-43-28	28 ± 5%	8.6	6.8	5.0
LFS-43-48	48 ± 5%	5.0	4.0	3.0

Current range must be chosen to suit the appropriate maximum temperature. Current ratings apply for entire voltage range.

REGULATED VOLTAGE OUTPUT

Regulation (line) . . . . . 0.1% from 95 to 132 VAC or 187 to 265 VAC or 260-370 VDC.

Regulation (load) . . . . . 0.1% from 0 to full load.

Ripple and Noise . . . . . 15 mV rms, 75 mV peak-to-peak for LFS-43-2, -5 and -6; 20 mV rms, 150 mV peak-to-peak for LFS-43-12 through LFS-43-28; 35 mV rms, 200 mV peak-to-peak for LFS-43-48 (20 MHz bandwidth measurement system). Ripple specifications apply for output terminals floating or with either positive or negative terminal grounded.

Temperature Coefficient . . . . . 0.03% per °C

Remote Programming

External Resistor . . . . . Nominal 1000 Ohms/volt output. Increasing resistance increases output voltage. Use a low temperature coefficient resistor to assure most stable operation.

Programming Voltage . . . . . One-to-one voltage change. The programming supply must have a reverse current capability of 2 ma min.

Remote Sensing . . . . . Provision is made for remote sensing to eliminate the effect of power output lead resistance on DC regulation. Sensing leads should be a twisted pair to minimize AC pickup. A 10 μf elect, capacitor may be required between output terminals and sense terminals to reduce noise pickup. An additional capacitor may also be required across the load to further reduce noise pick up; the value of this capacitor will depend upon the particular application.

OVERSHOOT — No overshoot under conditions of power turn-on, turn-off, or power failure.

AC INPUT — 95 to 132 volts AC at 47 to 440 Hz, or 187 to 265 VAC at 47 to 440 Hz via field selectable jumper. (When shipped from factory, all LFS-43 power supplies are wired for 95 to 132 VAC input. To configure for 187 to 265 VAC input, remove jumper between P.C. Board terminals 'A' and 'B'). Where applicable, regulatory agency approval applies only for input voltages up to 250 VAC and for input frequencies in the range 47-63 Hz. Leakage current in the ground connection may exceed the limits allowed by these agencies at frequencies above this range.

DC INPUT — 260 to 370 volts DC (unit must be configured for 187 to 265 VAC as described above).

EFFICIENCY — LFS-43-2 55% minimum, LFS-43-5 through LFS-43-15 75% minimum, LFS-43-20 through LFS-43-48 80% minimum.

INRUSH LIMITING — Turn on inrush current will not exceed 40 amps peak. (Note that LFS-43 power supplies employ a thermistor in their inrush limiting circuit; allow one minute cool down time before reapplying power).

OVERLOAD PROTECTION — Automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply. The current limit characteristic exhibits a region of constant current behavior (down to approximately 50% Vo (nominal)) followed by a foldback region.

HOLD UP TIME — LFS-43-2, LFS-43-5 and LFS-43-6 models will remain within regulation limits for at least 16.7 msec after loss of AC power when operating at maximum output power and 105 VAC input at 60 Hz, (or when configured for 220 V input: 20 msec holdup when operating at maximum output power and 210 VAC input at 50 Hz).

RECOMMENDED FUSING — 12 A, 250 V normal blow fuse in AC line (not supplied in unit) for 110 VAC input. Use 6A, 250 V for 220 VAC input.

INPUT AND OUTPUT CONNECTIONS — See outline drawing for location. AC input, sensing and remote on/off connections are made via PC board mounted terminal blocks. Ground connection is made via a chassis mounted solder terminal. DC output connections are made via heavy duty bus bars.

REMOTE TURN-ON/TURN-OFF — T^2L compatable signal enables remote turn-on/off of the power supply. A voltage of 2.8 to 5.0 V applied between "+R" and "-R" will initiate turn-off. Open circuit or short circuit condition, or a zero to 0.5 volt signal will cause turn-on.

COOLING — Convection cooled; no external blowers required.

OPERATING AMBIENT TEMPERATURE RANGE AND DUTY CYCLE — Continuous duty from 0°C to +60°C ambient with corresponding load current ratings for all modes of operation. Unit will start up at -10°C, but may not meet published specs until internal heating raises temperature to 0°C.

STORAGE TEMPERATURE — -55°C to +85°C

DC OUTPUT CONTROL — Screwdriver voltage adjust control permits adjustment of DC output voltage. See outline drawing for location of control.

WARRANTY — 1 year warranty from date of shipment . . . materials and labor

PHYSICAL DATA

Size	1.9" x 4.75" x 9.125"
Weight	3.0 lbs. net; 4.0 lbs. shipping
Finish	Gray, FED.STD.595 No. 26081

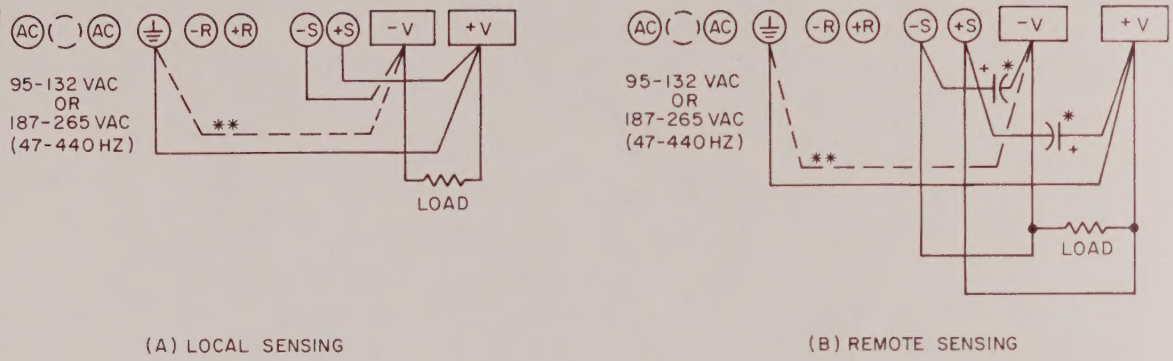
MOUNTING — One surface with threaded mounting holes can be utilized for mounting this unit. All LFS-43 power supplies must be mounted in a horizontal plane with 4.75" dimension vertical. Air circulation is required when unit is mounted in confined areas. Refer to outline drawing for mounting details.

OVERVOLTAGE PROTECTION — Standard on all models. If output voltage increases above a preset level, inverter drive is removed. Maximum overvoltage detect level: LFS-43-2 4.2 V, LFS-43-5 6.85 V, LFS-43-6 7.6 V, LFS-43-12 14.9 V, LFS-43-15 19.3 V, LFS-43-20 26.5 V, LFS-43-24 31.5 V, LFS-43-28 36.7 V, LFS-43-48 60.6 V.

ISOLATION RATINGS — Input terminals to output: 3750 V rms
Input terminals to ground: 1500 V rms
Output terminals to ground: 500 V rms

ACCESSORIES

Rack Adapters	Rack adapters LRS-15 and LRA-17, with or without chassis slides, are available for all LFS-43 units.
Standard Power Systems	All LFS power supplies can be integrated into the Lambda standard power system assembly which provides panel mounted pilot light, voltage control, fuse and output metering for the power supply as desired.



(A) LOCAL SENSING

(B) REMOTE SENSING

* A 10μF, ELECT. CAP MAY BE REQUIRED.

** FOR NEGATIVE GROUND, DISCONNECT JUMPER FROM TERMINALS ⏚ AND +V AND RECONNECT TO TERMINALS ⏚ AND -V

Figure 1. DC Output Connections

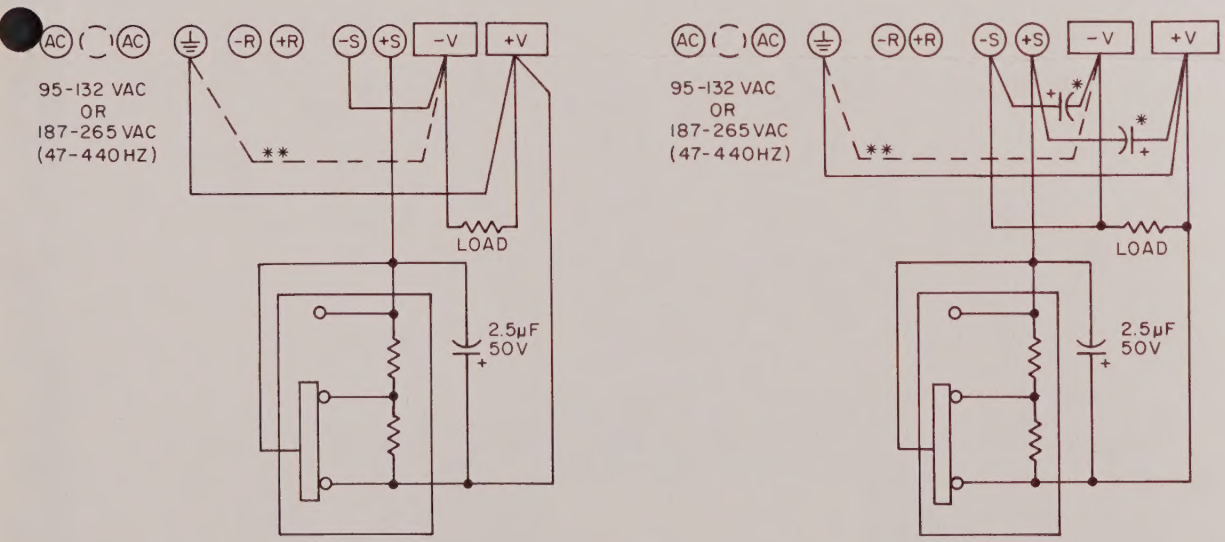


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Figure 2. Programmable Voltage, With External Resistor

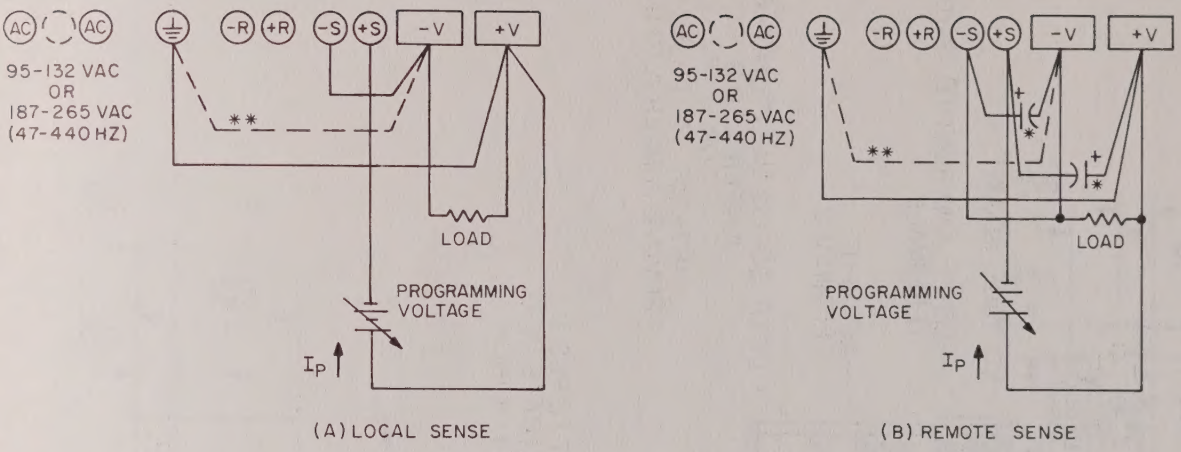

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Figure 3. Programmable Voltage, With External Voltage Source

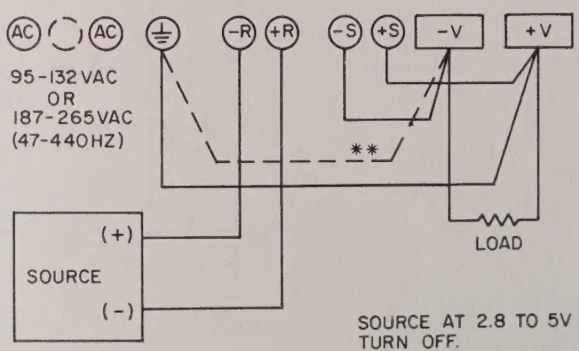

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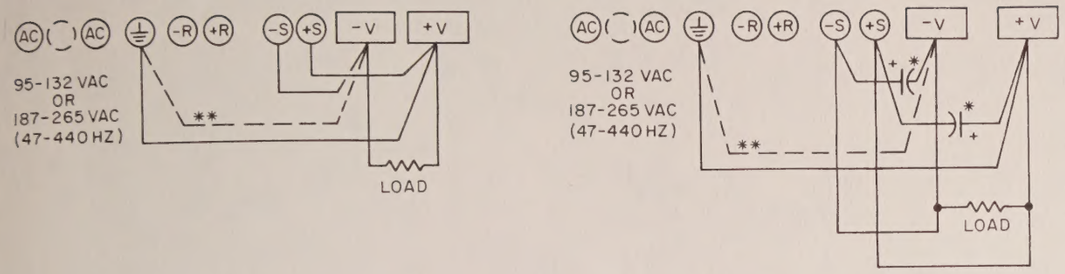
Figure 4. Remote Turn-On/Turn-Off



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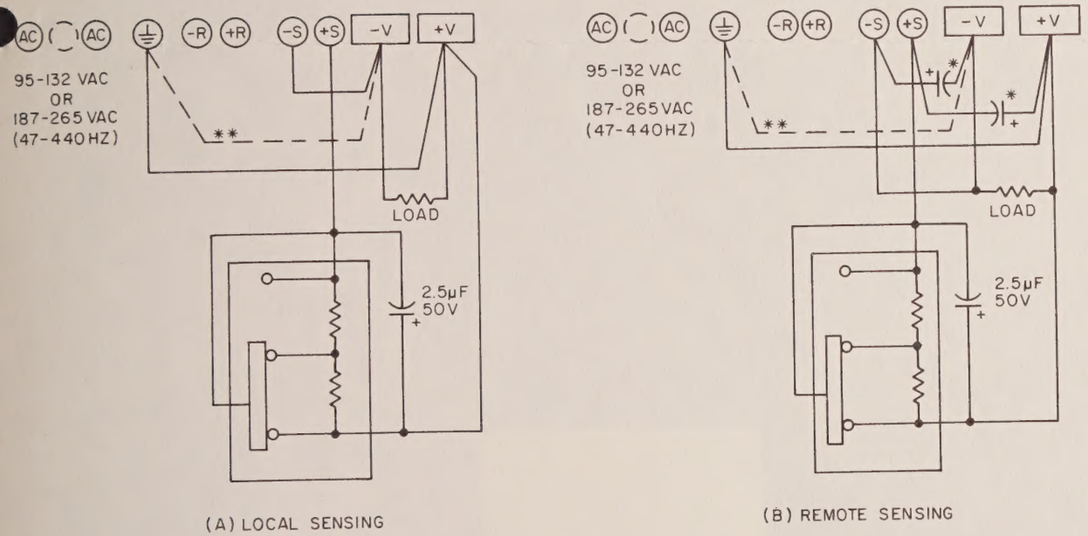

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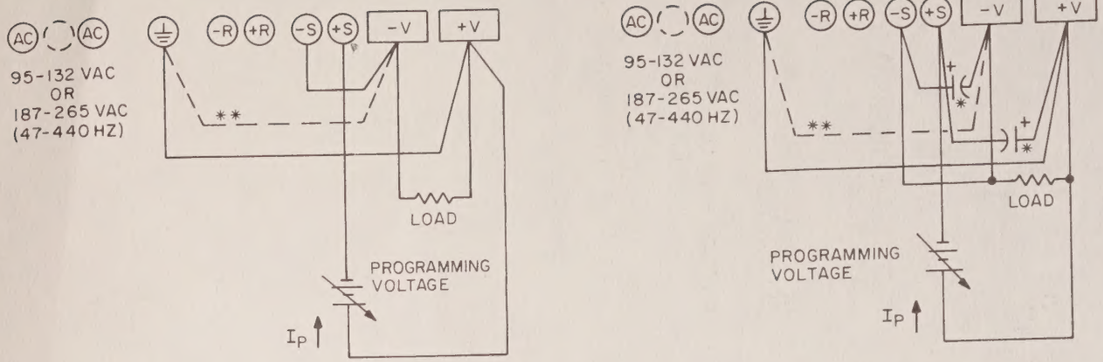

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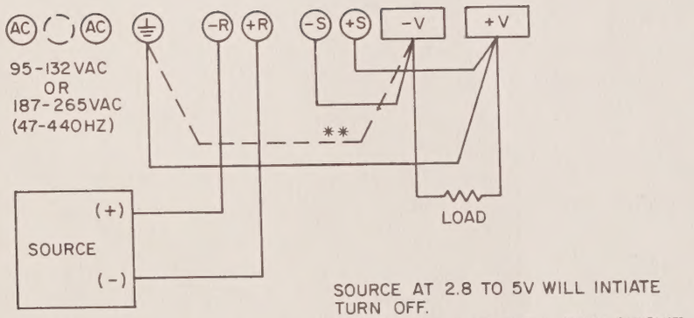

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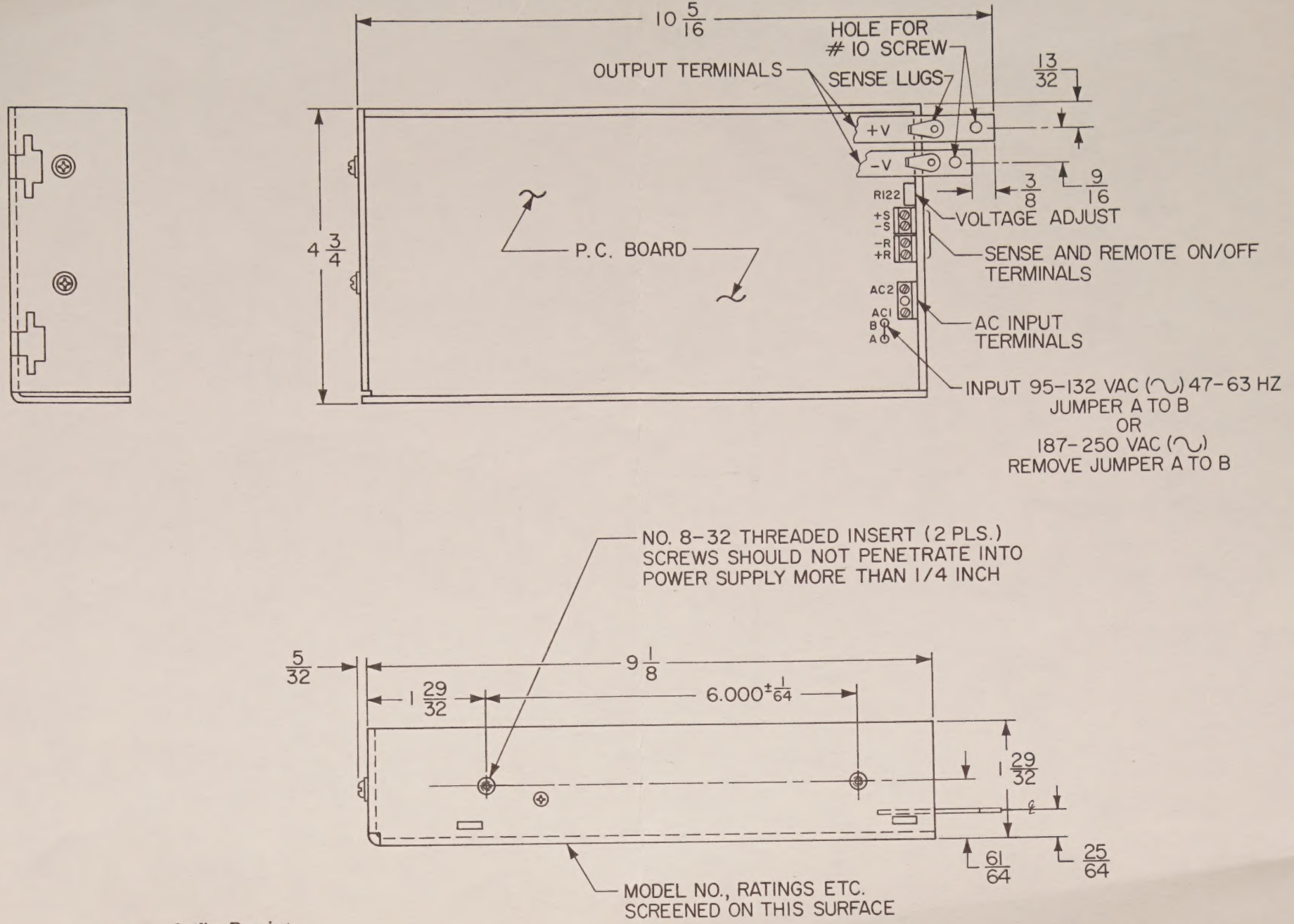
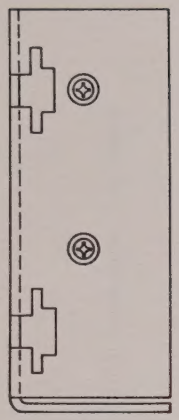
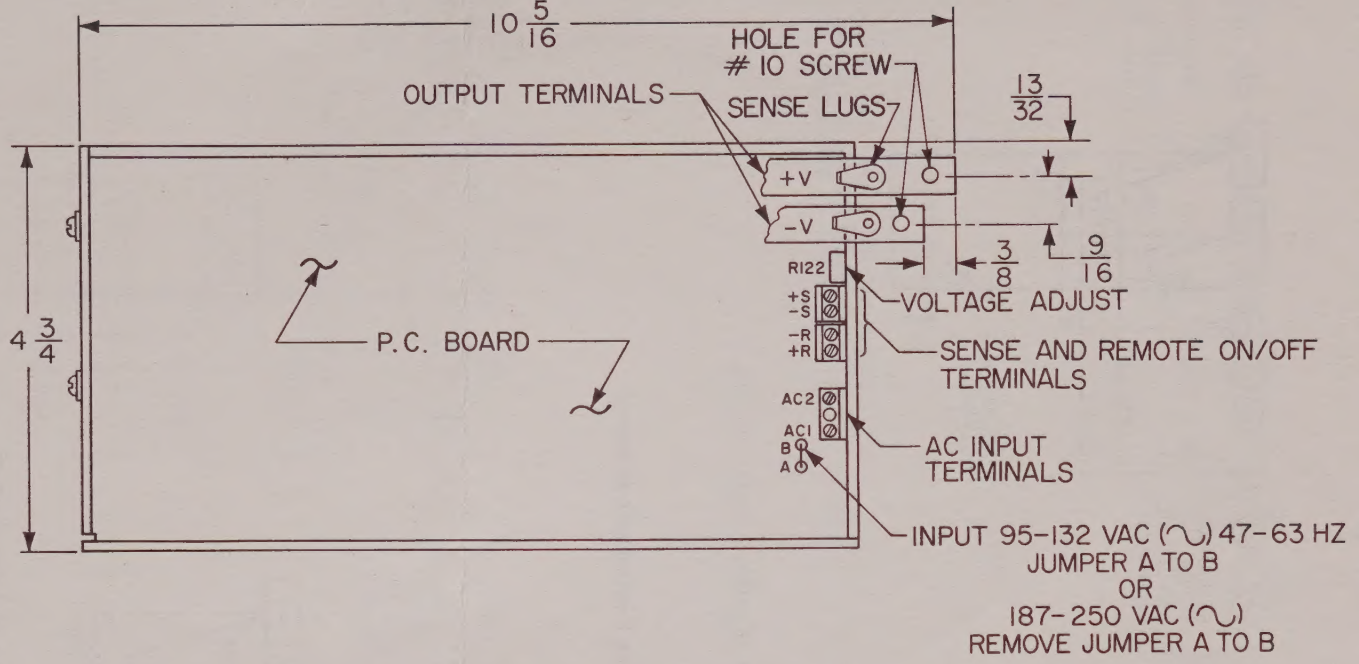
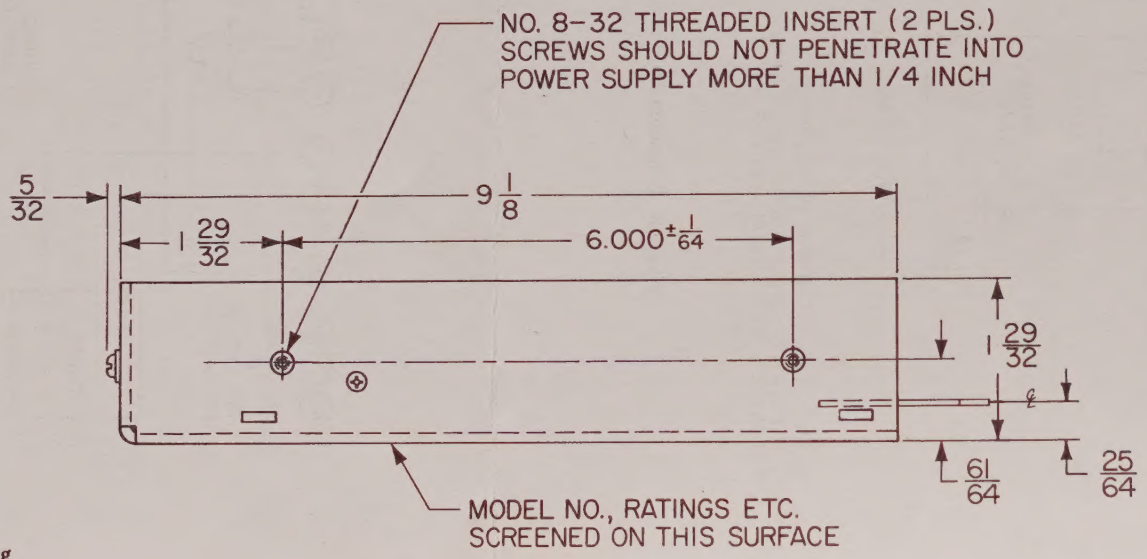


Outline Drawing







Outline Drawing

MP MASTER
MA26527
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